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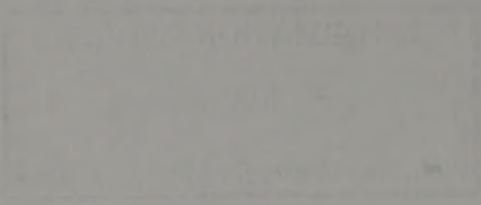
THE US R&D BUDGET FOR FY 1996: HALF TIME SCORE - OR END OF THE GAME?

1. The US House of Representatives has completed its action on appropriations for fiscal year 1996 non-defence R&D. The Senate has completed only part of its task. The process whereby the separate House and Senate proposals are reconciled has yet to be started. Thus we are about halfway towards a decision on the amount the US government will spend on R&D in 1996.
2. We are halfway through this year's budget - but many argue that we are at the end of a 50 year consensus on how research should be supported. It was in 1945 that Vannevar Bush, then the presidential science adviser, produced a report stating that "without scientific progress, no amount of achievement in other directions can ensure our health, prosperity and security as a nation in the modern world". The report is credited with establishing the federally sponsored programme linking government and university research. This programme has operated within a broad political consensus for the last 50 years. The current Republican drive to cut the budget has fractured that political consensus and seems likely to make a permanent change in government support of research.

Background:

3. The political complexion of Congress changed in November last year but the Administration proceeded with its budget request for FY 1996, seeking \$72.6 billion in total R&D funding, pretty much the same (\$73.0 b) as was approved by Congress last year. The Congress put the President's budget request to one side and passed its own budget resolution - a document which does not of itself make any financial commitment but provides guidance and allocations to the Appropriation Committees which do. This budget resolution proposed balancing the Federal budget by FY 2002 and made recommendations which would in practice lead to a reduction of about one-third in the non-defence R&D by that time.
4. The new Congress started by making cuts in the spending already agreed for FY 1995 and, guided by the budget resolution, is now in the process of passing the legislation to appropriate science funding for FY '96. The House of Representatives has completed its work. Its proposals have been described as "the most significant across the board funding cuts to the research and development enterprise in the post-World War II era".
5. Both the House and the Senate have to reach agreement on the appropriations bills. The Senate has different priorities and is in general less firmly wedded to cuts in the existing budget. So there is still much negotiation to do even when both houses have reached a conclusion on their own proposals. Further, the President has to approve the measures: he has already stated that he would veto eight of the eleven appropriations bills if they reach him in a similar form to those that passed the House.





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6. What follows is a brief description of those proposals and draws very heavily on an excellent analysis produced by the American Association for the Advancement of Science (AAAS). The full text of this is available on the World Wide Web (<http://www.aaas.org>).

#### Overall:

7. The House has appropriated \$31.5 billion for a non-defence R&D - 7.9% below the original (Democrat) agreed total for FY'95. "Basic" research would increase by an estimated 1.6% to \$14 billion with the major cuts coming in industrially related development programmes, particularly the Advanced Technology Programme at Commerce and the Environmental Technologies Initiatives at EPA. Current proposals for defence appropriation total \$36.8 billion, an increase of 4.2% on FY'95, reversing the trends towards a 50:50 civil defence split.

#### Department of Defence:

8. The House has not completed discussion on the DOD Appropriations Bill but the current proposal would increase defence R&D by 4.2% to a total of \$36.8 billion. This is nearly \$1.6 billion more than DOD requested! Perhaps more startling to those outside Washington, the largest increase, 23.2% above FY'95, is the \$3 billion allocated to the Ballistic Missile Defence Organization (President Reagan's "Star Wars" initiative).

9. Dual use technologies, intended to wean the defence industry off Pentagon funds and into commercial markets has been particularly hard hit with the Technology Reinvestment Programme, for which the Administration requested \$500 million, being eliminated. The House also proposes to withdraw support for the semiconductor consortium, SEMATECH, although there is support for both these projects in the Senate.

#### Department of Energy:

10. The House seemed to disregard the President's request for DOE, perhaps because at one time it intended to disband the agency. This now seems unlikely but their appropriation is \$1.2 billion below the \$7 billion requested by the Administration. Most of this cut falls on the industry orientated energy R&D programmes eg. solar energy and conservation. DOE's technology transfer programme would also be eliminated.

11. Proposals before the Senate also cut DOE's energy related R&D but in a less dramatic fashion. Reflecting the view that DOE should return to its core mission, the Senate proposes to increase by over 13% the work done on weapons research.







NASA:

12. Five years ago NASA was told to plan for a \$21 billion organization in 1995. The first Clinton budget in 1993 forecast it will be working at \$16 billion in 1995 and the last Administration plan is for \$14 billion. The President's budget in February showed a steady decline from \$14.6 billion in 1994 to \$13.2 billion in FY 2000. In the face of this everchanging objective NASA brought forward its own plans to consolidate labs and concentrate on its core activities. The present Republican budget is aiming at \$12 billion by the end of the year 2000 and would necessitate yet further cuts. It would require the NASA R&D budget to fall from \$9.9 billion in FY'95 to \$7.9 billion in FY 2002. At the same time it proposes that the Space Station be fully supported. The implication is that other programmes must take a substantial cut.

13. Mission to Planet Earth has been reduced to \$1 billion (a 22% cut); the House proposes to terminate the Space Infrared Telescope Facility and reduce the Stratospheric Observatory for Infrared Astronomy. At one time it proposed to terminate the Cassini Mission to Saturn. The Committee has stated that outright termination of some of NASA's programmes "may be necessary" in the future. On this occasion the House may well be more benign than the Senate which seems likely to restore funding for programmes like housing and veterans which compete directly with NASA for funding.

National Science Foundation:

14. The NSF, with its emphasis on the politically correct "basic" research, has escaped relatively unscathed. Its programme of peer reviewed investigator-initiated research grants will increase slightly in dollar terms. Overall the budget is cut by just over 2% from its FY'95 level to \$2.4 billion. Work on facilities such as the Laser Interferometer Gravitational Wave Observatory and the Gemini Telescopes will continue.

National Institutes of Health:

15. As in the past, the NIH seems relatively immune to cuts. The House would increase their R&D budget by 6.2% to \$11.4 billion. The House simply added 1.3% to the budget request for every institute: the effect being to accept the Administration's priorities and thereby give 11.2% more for the human genome project and even an extra 9% for programmes such as minority health and alternative medicine (topics not in favour with this Congress!).

16. Although the NIH has always found favour with Congress the budget resolution called for an immediate 5% cut in FY'96 and a freeze thereafter, so to allow funding of NIH the House Appropriations Committee had to make cuts elsewhere, including eliminating 93 programmes in the Department of Education. Such cuts in education and training programmes have prompted the President to threaten a veto on the entire bill.





Department of Commerce:

17. Funding for the DOC R&D programmes was originally set at \$1.3 billion for FY'95. A major element of this was the dramatic expansion of the Advanced Technology Programme (ATP), designed to support commercial development work in industry. The FY'96 House Appropriation for Commerce would provide \$741.4 million - a cut of 33.6% and it would eliminate the ATP. Thus a key element of Clinton's technology programme would go from \$200 million in '94 to \$430 million in '95 to zero in 1996. However although the demise of this programme grabs the headlines the intramural laboratory programmes at NIST have fared reasonably well; under the budget resolution they would be expected to increase above the rate of inflation.

Summary:

18. The detail of which programme is cut and by how much will change, in some cases quite significantly, when the House of Representatives and the Senate come to reconcile their two proposals. Nonetheless the broad trend for FY'96 is clear. It seems the general consensus on Federal funding of R&D has gone. There is no longer an acceptance of government's role in supporting collaborative projects with industry and there is a wide difference of view on how much government should support anything other than fundamental research. And even in this area there are clear differences in what constitutes "basic" research!

19. This loss of consensus means that funding for R&D is likely to swing backwards and forwards in line with changing political fortunes in the House of Representatives. This can hardly be for the good of R&D in the US - and as the US is estimated to spend more than the total R&D expenditure of Japan, Germany, France and UK combined - the world.

British Embassy, Washington

7th September 1995



